



# UNITED STATES PATENT AND TRADEMARK OFFICE

701

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,964	11/16/2001	Satoshi Nakao	107156-00084	7918

7590 01/04/2006

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC  
Suite 600  
1050 Connecticut Avenue, N.W.  
Washington, DC 20036-5339

EXAMINER

AGHDAM, FRESHTEH N

ART UNIT	PAPER NUMBER
----------	--------------

2631

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/987,964	<b>Applicant(s)</b> NAKAO ET AL.	
	<b>Examiner</b> Freshteh N. Aghdam	<b>Art Unit</b> 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 10/26/2005 have been fully considered but they are not persuasive.

***Applicant's Arguments:*** Applicant in page 4, paragraph 3, argues that the claimed invention is not taught or suggested by the instant application's disclosed prior art and further in view of Schmutz et al (US 2001/0048727) "a detector for detecting the level of an OFDM signal; an automatic gain controller for adjusting the level of the OFDM signal in accordance with a signal level detected by the detector; and a controller for determining an actual signal receiving condition in accordance with the signal level detected by the detector, and for setting gain control conditions of the automatic gain controller in accordance with a result of determination of an actual signal receiving condition, wherein the automatic gain controller operates under a gain control condition set by the controller to adjust the level of the OFDM signal in accordance with a signal level detected by the detector."

**Examiner Response:** The instant application's disclosed prior art teaches a signal level detector 9 for detecting the level of an OFDM signal and an automatic gain controller (AGC) in order to adjust the level of the OFDM signal in accordance with a signal level detected by the detector (Fig. 8, Pg. 2, Lines 25-27; Pg. 3, Line 1). The instant application's disclosed prior art is silent about a controller for determining an actual signal receiving condition in accordance with the signal level detected by the

Art Unit: 2631

detector, and for setting gain control conditions of the automatic gain controller in accordance with a result of determination of an actual signal receiving condition, wherein the automatic gain controller operates under a gain control condition set by the controller, to adjust the level of the signal in accordance with a signal level detected by the detector. Schmutz teaches a controller for determining an actual signal receiving condition in accordance with the signal level detected by the detector, and for setting gain control conditions of the automatic gain controller in accordance with a result of determination of an actual signal receiving condition, wherein the automatic gain controller operates under a gain control condition set by the controller, to adjust the level of the signal in accordance with a signal level detected by the detector (Fig. 4, Pg. 4, Par. 9 and 31).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the instant application's disclosed prior art, and further in view of Schmutz et al (US 2001/0048727).

As to claim 4, the instant application's disclosed prior art teaches a signal level detector 9 for detecting the level of an OFDM signal and an automatic gain controller

(AGC) in order to adjust the level of the OFDM signal in accordance with a signal level detected by the detector (Fig. 8, Pg. 2, Lines 25-27; Pg. 3, Line 1). The instant application's disclosed prior art is silent about a controller for determining an actual signal receiving condition in accordance with the signal level detected by the detector, and for setting gain control conditions of the automatic gain controller in accordance with a result of determination of an actual signal receiving condition, wherein the automatic gain controller operates under a gain control condition set by the controller, to adjust the level of signal in accordance with the signal level detected by the detector. Schmutz teaches a controller for determining an actual signal receiving condition in accordance with the signal level detected by the detector, and for setting gain control conditions of the automatic gain controller in accordance with a result of determination of an actual signal receiving condition, wherein the automatic gain controller operates under a gain control condition set by the controller, to adjust the level of the signal in accordance with a signal level detected by the detector (Fig. 4, Pg. 4, Par. 9 and 31). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Schmutz with the instant application's disclosed prior art in order to appropriately adjust the gain factors (Pg. 4, Par. 31).

As to claim 5, Schmutz et al teach a controller (i.e. a method of gain adjustment factors) in which the controller averages amplitudes of the at least one previously received signal arriving during the at least one earlier frame and then an appropriate gain adjustment factor is determined (Fig. 4; Pg. 4, Par. 31). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Schmutz et al

with the admitted prior art in order to determine the gain adjustment factor in variety of ways (Pg. 4, Par. 31).

As to claim 6, Schmutz et al disclose a gain adjustment factor method by determining the actual received signal condition in each predetermined period (Fig. 4; Pg. 4, Par. 31). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Schmutz et al with the admitted prior art in order to appropriately adjust the gain factors exclusively to the currently received signals (Pg. 4, Par. 31).

As to claims 7-9, one of ordinary skill in the art would clearly recognize that the controller detects at least one of gain control period, level detection period, level control range for gain control and gain control amount (Schmutz teaches controlling the gain by some amount determined by the gain factor in abstract).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2631

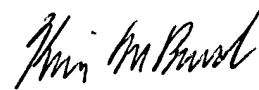
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh N. Aghdam  
December 14, 2005

  
**KEVIN BURD**  
**PRIMARY EXAMINER**